

The bird continued to call for the next five minutes and was joined by a female which perched next to the male. In the next three minutes the female once uttered a call similar to that of the male.

Later the female flew over and alighted on a neighbouring horizontal branch (10 cm in diameter) closely followed by the male. On alighting the female squatted across and crouched low over the branch. The male which had alighted next to the female, sidled up and mounted the female. The male copulated vigorously, gripping the wing bases of the female with its feet and thrashing its wings to maintain balance. The wings of the female drooped low, while the tail of the male was under its belly. The process lasted for about 10 seconds and we presume

it resulted in effective coitus. Both birds remained silent during the act.

After the copulation the male flew back to the branch where it was seen earlier and started preening. The pair remained within the canopy of *A. amara* for the next 20 minutes, before flying into the dense canopy of a 10 m tall *Terminalia bellerica* about 40 m away. The mating took place between 1030 and 1110 hrs and within the canopy.

The species has not been seen before in Bangalore.

J. N. PRASAD¹

A. MADHUSUDAN²

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¹13, 8th Cross, 30th Main, J.P. Nagar I Phase, Bangalore 78

²153, I Floor, 36th Cross, 7th Block Jayanagar, Bangalore 82

12. ACTIVITY-TIME BUDGET OF INDIAN MYNA *ACRIDOTHERES TRISTIS* (LINNAEUS) DURING THE BREEDING SEASON

(With two text-figures)

The Indian myna *Acridotheres tristis* (Linnaeus) is a familiar urban species and a hole-nester. Principally, its breeding season is between April and July. At night, in all seasons they roost communally in large groups.

The activity-time budgets in mynas was studied from 0600 to 1900 hrs from 3 April to 30 June 1978. This study was carried out in Pune, Maharashtra (18°30'N, 73°53' E) particularly in two residential colonies and the campus of the University of Poona. Solitary and paired mynas were selected randomly and followed till they went out of sight. Their activities were recorded on a tape recorder. Each activity was then measured in seconds and allotted to the following relevant major categories for each hour on a particular day of observation.

The activities were divided into eight major and several sub-categories as: (1) Nesting (billing, mating, bringing nesting material, and sitting at the nest) — presumably for guarding or incubation of eggs and maintenance of nest. (2) Scanning (scanning the environs in general, mouth opening and resting). (3) Locomotion (jumping, hopping, walking and flying). (4) Feeding (food searching, picking of food, drinking and droppings). (5) Calls (flight intention calls, bowing calls, communication calls, alarm calls, aggressive vocalizations and diurnal communal calls). (6) Preening (cleaning or removing of foreign particles from head, neck, body, wings, tail; retaining

feathers in condition while sitting). (7) Shaking (shaking of head, body, wings, tail, rubbing of beak after feeding, drinking or preening activity; stretching of legs, and wing flapping while in sitting position). (8) Interactions (jostling during food search or in play,

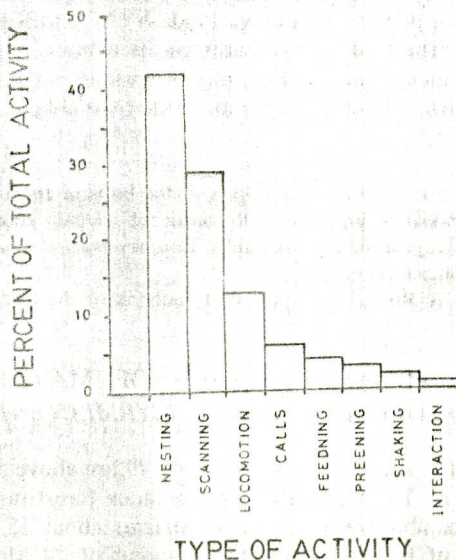


Fig. 1. Comparison of time spent in various activities by mynas during the breeding season.

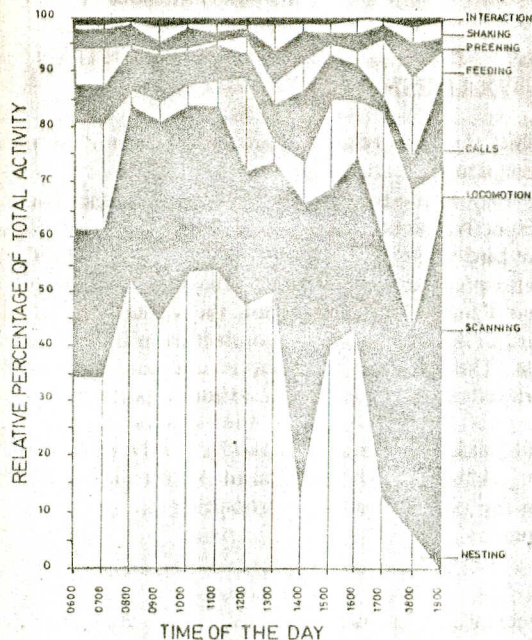


Fig. 2. Activity-time budgets of mynas during different hours of the day.

chasing and interactions with other species of birds).

Data collected for about 74 hours was analysed. The percentage of total time utilised for each major activity was then calculated (Fig. 1). The activity-time budgets for the different hours of the day are shown in Fig. 2. The figures indicate that:

Nesting activity was the predominant activity (42%) during daytime. It decreased slightly in the afternoon between 1300 and 1400 hrs and further declined after 1700 hrs.

Throughout the day mynas were busy in scan-

ning the environs. This was the second most important activity (28%), probably because it relates to anti-predatory behaviour. This activity increased in the morning and in the afternoon between 1300 and 1400 hrs and again after 1800 hrs.

The time spent in locomotion (12%) and in feeding (4%) activities were more or less directly proportional to each other, as locomotion is mainly related with food finding activity. The feeding activity was more in the morning between 0600 and 0800 hrs and in the evening (1700 hrs) well before roosting.

Mynas made various calls throughout the day and spent about 7% of the total time calling. This activity was relatively higher in the morning around 0900 hrs, then in the afternoon between 1300 and 1400 hrs and late in the evening after 1800 hrs. This activity thus seems to be closely related to scanning.

The remaining activities such as preening (3%), shaking (2.5%), and mutual interactions (1.5%) took considerably less time as compared to the other major activities. Preening activity slightly increased (along with scanning) in the afternoon and late in the evening.

The exact time spent in resting activity during daytime was rather difficult to assess, but at night mynas sleep at the communal roost. Time spent in such communal roosts varies monthly and depends upon the time of sunset and sunrise. The total time spent in sleep during the study period was estimated as about 695 min. in April, 655 min. in May and 640 min. in June 1978.

The nesting activity was the highest as anticipated since the study period coincided with the peak breeding season. Further, it would be interesting to study the time-budgets of laying, incubation, brood development separately by males and females; and also the various activities performed during the non-breeding season.

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ANIL MAHABAL

Zoological Survey of India, High Altitude Zoology Field Station, Solan, Himachal Pradesh 173 212

13. BREEDING RECORD OF FERRUGINOUS FLYCATCHER *MUSCICAPA FERRUGINEA* (HODGSON)

The ferruginous flycatcher *Muscicapa ferruginea* was often seen during my visit to Talley valley in Lower Subansiri district, Assam, from 19 June

to 24 June 1991. The sightings were made at altitudes varying from c. 1525 m to c. 2135 m in darker areas in temperate broad leaved forests. At one place two